Roy Luo

437-363-4171 | royluocanada@gmail.com | https://www.linkedin.com/in/luo-roy/ | https://github.com/Derpilicious

Education

University of Waterloo Sep 2023 – Apr 2027
Statistics, Co-op *Waterloo, Ontario*

McMaster University Sep 2022 – Apr 2023
Mathematics and Statistics *Hamilton, Ontario*

Technical Skills

Programming Languages: Python, R, SQL, C
Tools: PowerBI, Excel, Word, Powerpoint, Git
Languages: English, Mandarin, French

Experience

Credit Risk Modelling Intern Sep 2024 – Dec 2024
Alberta Investment Management Corporation *Toronto, ON*

- Working on the Credit Risk Modelling team.

Investment Risk Intern Jan 2024 – Apr 2024
Healthcare of Ontario Pension Plan *Toronto, ON*

- Automated dynamic hedging calculations using Python, reducing manual processing time by 10 hours a week and delivering 100% reporting accuracy.
- Engineered a stress testing tool that evaluated the impact of real rate fluctuations on billions in both liabilities and fixed-income holdings using data from Snowflake, SAP HANA and SQL Server.
- Streamlined the process for generating liquidity risk reports using matplotlib, reducing the turnaround time by 33% and ensuring compliance with financial regulations.

Data Analyst Intern May 2023 – Aug 2023
Precision Insight Consulting *Toronto, ON*

- Imported equity/bond trades using built-in Simcorp Dimension tools, mapping them to transaction codes and performing instrument type validation with a 99.5% accuracy rate.
- Configured and managed batch jobs for data extraction, optimizing data handling and processing efficiency, saving 15 hours per month of manual work.
- Constructed reference files documenting daily CAD/USD settlements in Excel and NAV reconciliation reports in Python, reducing reporting errors by 100% and enhancing data accessibility and accuracy.

Projects

League of Legends Churn Analysis | *Python, pandas, sklearn*

- Leveraged a REST API to collect extensive gameplay data, including match statistics and player attributes for over 1,000 new players.
- Implemented and optimized machine learning models, including logistic regression, decision tree, random forests, and neural networks, achieving up to 78% accuracy in predicting player retention.
- Engineered relevant features and applied dimensionality reduction techniques like principal component analysis (PCA) to extract important patterns and reduce data complexity, achieving up to 95.75% variance explained.

Live Bitcoin Orderbook Dashboard | *R, SQL Server, PowerBI*

- Developed an R script to extract, clean and reformat live orderbook data from a websocket feed transmitting 25000+ Bitcoin orders a minute.
- Uploaded and stored data in SQL Server, which was loaded into PowerBI using DirectQuery, resulting in a 50% reduction in dashboard loading time compared to traditional data loading methods.
- Maintained a near real-time cryptocurrency orderbook dashboard with a refresh rate of 1 second, displaying important metrics like mid-market rate, order prices, market depth, and bid-ask spread.